

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-15 (Cancelled)

16. (Currently Amended) A fuel injector having a valve driven by electromagnetic force, which injects fuel directly into a cylinder of an internal combustion engine, comprising:

a first coil in which a large excitation current flows for a short time during a beginning of a valve opening operation so as to substantially secure magnetomotive force necessary to open said valve;

a second coil in which a relatively small excitation current flows so as to substantially secure magnetomotive force to hold the valve in an open state after said valve is opened; and

a bobbin on which said first and second coils are wound;

wherein said bobbin with said first and second coils is formed by a resin molding material having a heat conductivity between 1.0 – 3.0 W/mk, and

wherein said first and second coils are arranged on an axial direction of said bobbin, a flange for partitioning between said first coil and said second coil is provided at the bobbin, and said flange extends to the inner surface of a yoke housing the first and second coils.

17. (Previously Presented) The fuel injector according to claim 16, wherein said bobbin is formed by a synthetic resin containing a filler having good heat conductivity.

18. (Previously Presented) The fuel injector according to claim 16, further comprising a stationary core arranged at a center of a main body of the fuel injector, said first and second coils arranged at the outside of said stationary core through said bobbin;

a cylindrical yoke arranged at the outside of said first and second coils;

wherein said bobbin is formed by a synthetic resin containing a filler having good heat conductivity, and wherein heat of said first and second coils is conducted to said core and said yoke through said bobbin, and further an air gap is formed between the outside surface in said coil and an inner circumference of said yoke.

19. (Previously Presented) The fuel injector according to claim 16, wherein said bobbin is formed of polyphenylene sulfide containing iron oxide and/or alumina as a filler.

20. (Previously Presented) The fuel injector according to claim 16, wherein said bobbin is constituted by iron oxide and/or alumina in 30 – 80 weight %, and further by polyphenylene sulfide and glass fiber.

21. (Previously Presented) The fuel injector according to claim 16, wherein said fuel injector is a battery-type injector driven by supplying a battery voltage to said first and second coils directly.

22. (Cancelled)